

20th International EME conference Trenton 2024

# Final setup and operation of 8m offset dish



# Setup procedure:

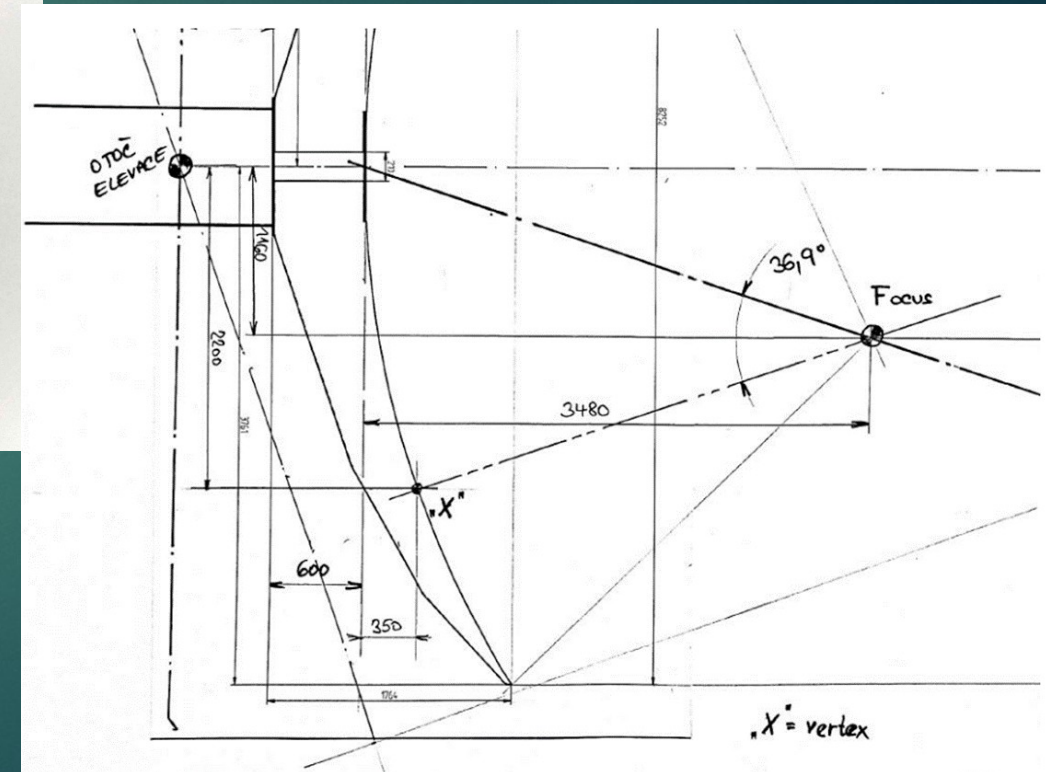
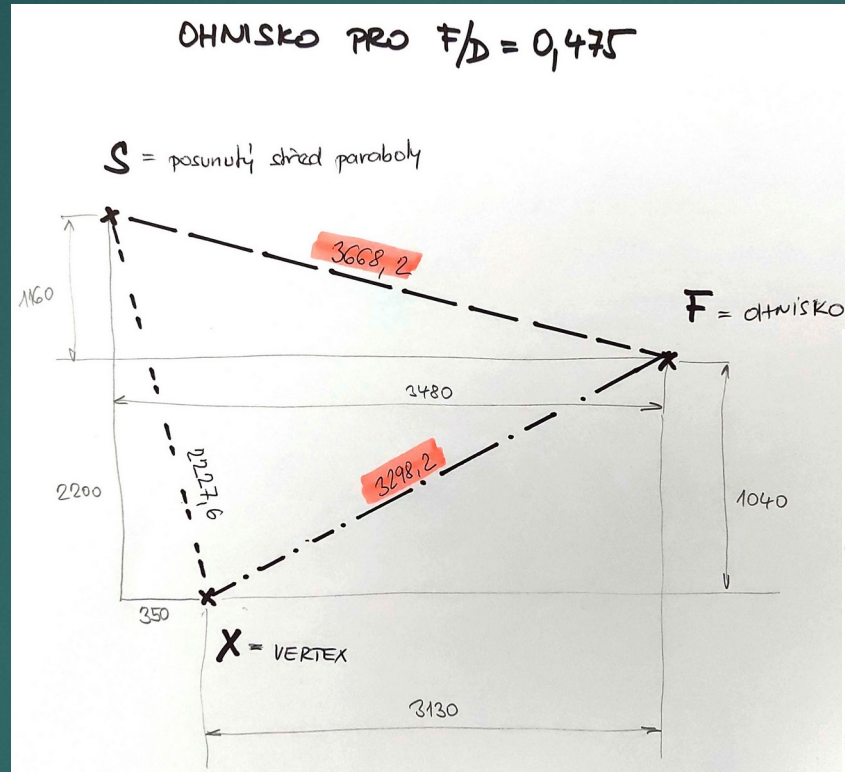
- Status of the dish after completion 10/2021
- Calculation of the exact position of the dish focus
- Production of setting jig
- Production of anchoring elements of the jig fixture
- Adjusting the feed holder to the focal point
- Feed axis offset angle setting
- Measuring the Sun's noise
- Measuring Moon Noise
- CW, SSB and Q65 echo test
- EME connections realized after feedhorn adjustment
- Production of feedhorn for 432 MHz
- Test of the dish for 432 MHz band



# Antenna and focus adjustment

## 03/2022

- Calculation of the exact position of the parabola focus





# Antenna and focus adjustment

## 03/2022

- Production of setting jig
- Production of anchoring elements of the fixture
- Adjusting the feed holder to the focal point





# Antenna and focus adjustment

## 03/2022

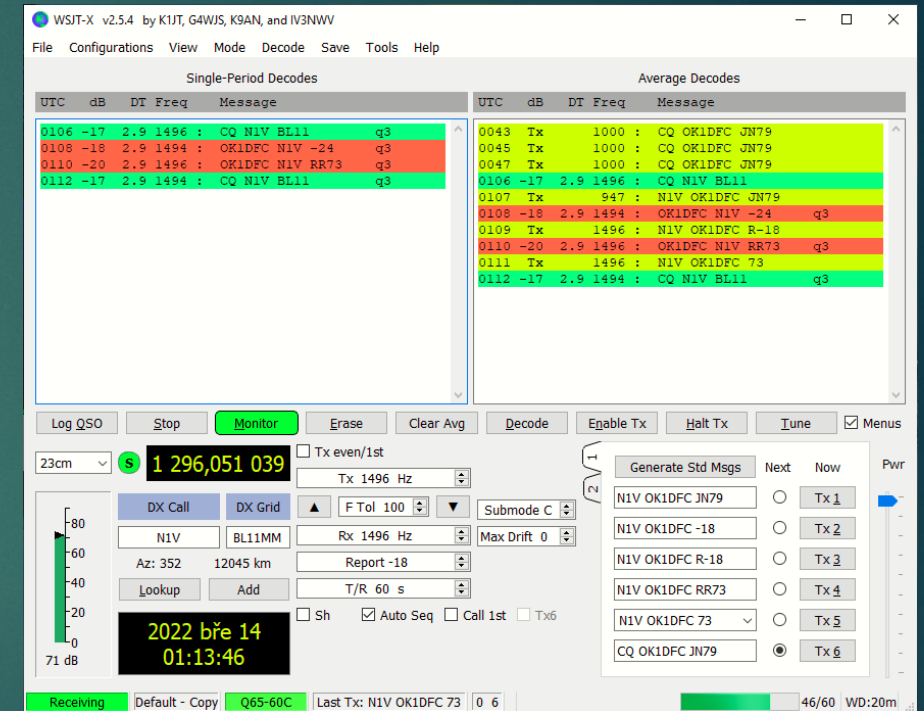
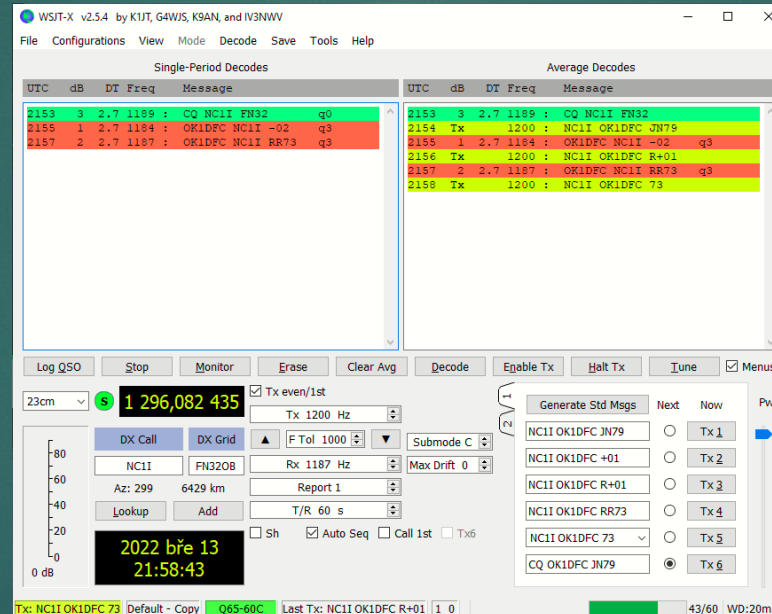
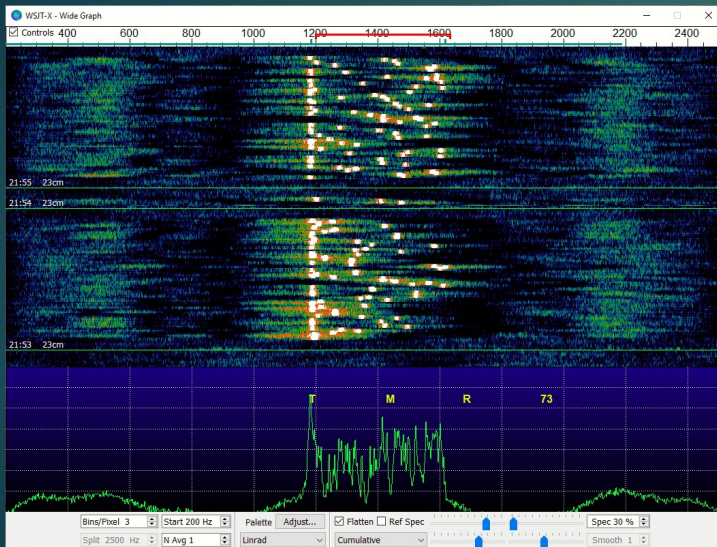
- Feed axis offset angle adjustment  $36.9^\circ$
- Measuring the Sun's noise
- **22.5dB - 123 SFU**
- Measuring Moon Noise
- **1,1dB - clear sky**





# After dish and focus adjustment

- Self echo test CW - 599, SSB - 57 and Q65 +02 DB, - 10W easily detectable CW signal
- EME QSO realized with **NC1I** and **N1V**

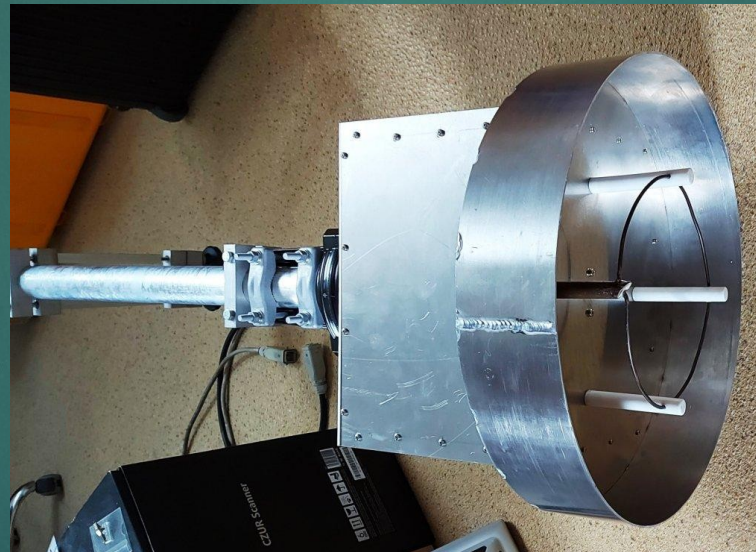
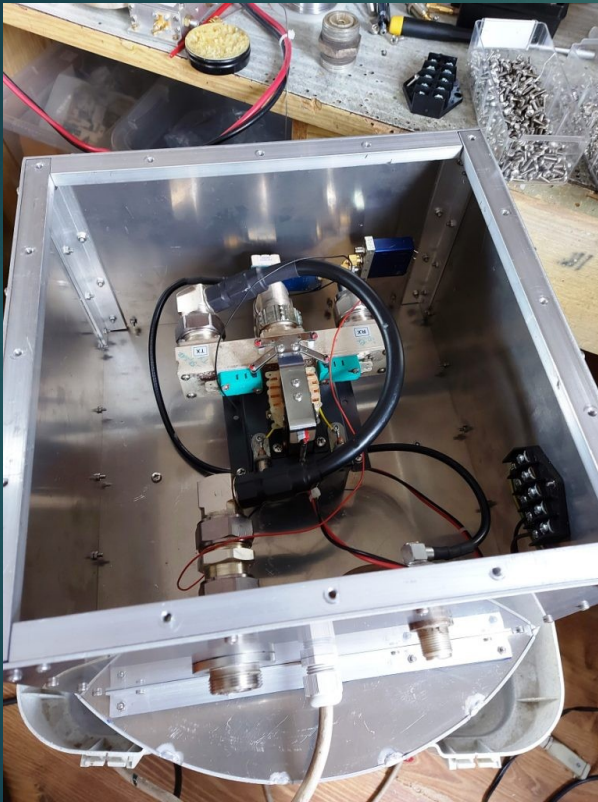


- CW smallest station 180cm offset and 50W RF 539
- Q65 3m dish and **3W** RF !!! -18DB - **PA0TBR**



# Dish and focus adjustment 03/2022

- Production of the 432 MHz feedhorn - Loop feed

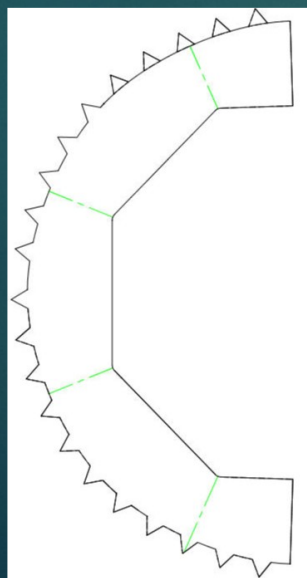
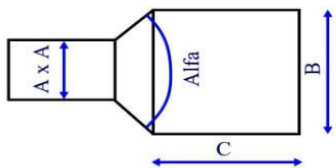




# Feeds

- Construction of 1296 MHz feed - septum OK1DFC
- Funnel W2IMU
- F/D = **0.457**
- 1296 and 2320 MHz

	MHz	$\lambda$ m	$\lambda$ cm
input	Frequency: 1296	0,231481	23,14815
input	F/D 0,457		
	Dimension "B"	0,2486 m	248,6 mm
	Feed half angle: 41,52894 $\alpha/2^\circ$		83,05787 $\alpha^\circ$
	Dimension "C"	0,294388 m	294,4 mm
	Dimension "A x A"	0,143 m	143 mm
	TE11	0,424111	
	TM11	0,203852	





# Dish and focus adjustment

## 03/2022

- 432 MHz dish test
- Smallest station 10el. Single Yagi and 100W -27 DB
- Sun **20dB** at SFU 123, up to 18° angle of elevation

WSJT-X v2.5.4 by K1JT, G4WJS, K9AN, and IV3NWX

File Configurations View Mode Decode Save Tools Help

Single-Period Decodes

UTC	dB	DT	Freq	Message
1114	-13	2.9	1501	: CQ HS0ZOP OK03 q3
1116	-13	2.9	1499	: OK1DFC HS0ZOP -20 q3
1124	-13	2.7	1055	: CQ HS0ZOP OK03 q3
1126	-15	2.6	1055	: OK1DFC HS0ZOP -21 q3
1128	-16	2.7	1055	: OK1DFC HS0ZOP RRR q3
1131	-23	2.6	1080	: HS0ZOP PA2V JO22 q0

Average Decodes

UTC	dB	DT	Freq	Message
1114	-13	2.9	1501	: CQ HS0ZOP OK03 q3
1114	-13	2.9	1501	: CQ HS0ZOP OK03
1115	Tx		2184	: HS0ZOP OK1DFC JN79
1116	-13	2.9	1499	: OK1DFC HS0ZOP -20 q3
1117	Tx		1501	: HS0ZOP OK1DFC R-13
1119	Tx		1501	: HS0ZOP OK1DFC R-13
1121	Tx		1501	: HS0ZOP OK1DFC R-13
1123	Tx		1501	: HS0ZOP OK1DFC R-13
1124	-13	2.7	1055	: CQ HS0ZOP OK03 q3
1124	-13	2.7	1055	: CQ HS0ZOP OK03
1125	Tx		1501	: HS0ZOP OK1DFC JN79
1126	-15	2.6	1055	: OK1DFC HS0ZOP -21 q3
1127	Tx		1055	: HS0ZOP OK1DFC R-15
1128	-16	2.7	1055	: OK1DFC HS0ZOP RRR q3
1129	Tx		1055	: HS0ZOP OK1DFC 73
1129	Tx		1055	: HS0ZOP OK1DFC 73

Log QSO Stop Monitor Erase Clear Avg Decode Enable Tx Halt Tx Tune Menus

70cm S 432,080 635 Tx even/1st Tx 1055 Hz

DX Call DX Grid HS0ZOP OK03GR F Tol 100 Rx 1055 Hz Submode B Max Drift 0

Az: 84 8568 km Report -15 T/R 60 s

Lookup Add Sh Auto Seq Call 1st Tx6

2022 dub 10 11:31:59

Generate Std Msgs Next Now

HS0ZOP OK1DFC JN79	<input type="radio"/>	Tx 1
HS0ZOP OK1DFC -15	<input type="radio"/>	Tx 2
HS0ZOP OK1DFC R-15	<input type="radio"/>	Tx 3
HS0ZOP OK1DFC RRR73	<input type="radio"/>	Tx 4
HS0ZOP OK1DFC 73	<input type="radio"/>	Tx 5
CQ OK1DFC JN79	<input checked="" type="radio"/>	Tx 6

Receiving Default - Copy Q65-60B Last Tx: HS0ZOP OK1DFC 73 1 0 59/60 WD:20m



# Conclusion

Thank you for your attention -  
Questions ?????